



ANALYSIS OF THE PROFITABILITY OF MERANG MUSHROOM FARMING IN BAKTIYA BARAT DISTRICT, NORTH ACEH DISTRICT

Nisaul Husna¹, Jamilah², Muhammad Authar³, Riani⁴

¹Student of Agribusiness Department, Faculty of Agriculture, Universitas Malikussaleh, North Aceh

^{2,3,4}Faculty of Agriculture, Universitas Malikussaleh, North Aceh

Corresponding E-mail: nisaulhusna.170320035@mhs.unimal.ac.id

Abstract

This study uses a quantitative descriptive method. From the calculation of the profitability studied, it shows that the mushroom farming has the ability and obtains a profit or profitability of 50%. This shows that the mushroom farming gets a large profit from the production activities that are cultivated. Based on the results of research and analysis of the profitability of the data that has been carried out on the mushroom farming of Mr. Tarmizi in Baktiya Barat District, North Aceh Regency, it can be concluded, among others: 1. The total costs incurred on the mushroom farming for one production process are Rp. 3,571,478.9 with details of fixed costs of Rp. 225,478.9 and variable costs of Rp. 3,346,000. With the income obtained is Rp. 7,500,000 so that's a profit of Rp. 3,928,521.1. 2. Straw mushroom farming is a farm engaged in agriculture that is able to earn a profit of 50%.

Keywords: *Straw Mushroom Farming, Profitability*

Introduction

Straw mushroom (*Volvariella volvacea*) is one of the shoot vegetable commodities that has a good future for development. Until now, more and more people know the nutritional value of straw mushrooms and their benefits for human health. On the other hand, mushroom production in Indonesia is very limited, so the economic value of straw mushrooms is increasing (Sinaga, 2000). Globally, agriculture includes several sectors including agriculture, fisheries, animal husbandry and forestry. Processed products from these four sectors are combined into agribusiness.

Fungi are plants that do not have chlorophyll so they cannot carry out the process of photosynthesis to produce their own food. Fungi live by taking food substances, such as cellulose, glucose, lignin, protein and starch compounds from other organisms. With the help of enzymes produced by hifs (parts of fungi that look like fine, long and sometimes branched threads), these food ingredients are broken down into compounds that can be absorbed for growth. Fungi are classified as heterotrophic plants, namely plants whose life depends on other organisms (Andoko, 2007).

Straw mushrooms can also be used not only for food but also for the medicinal industry and almost some people use straw mushrooms as raw material. Straw mushrooms are a type of wood mushroom that is very good for human consumption. Apart from having a distinctive taste, these two mushrooms also have high nutritional value such as protein, carbohydrates and various vitamins. In fact, according to research, its nutritional content is higher than chicken meat. So it is not wrong if mushrooms are said to be the food of the future. Straw mushrooms also contain the enzyme trypsin which plays an important role in helping the digestive process. Apart from that, straw mushrooms are rich in B-complex vitamins and have quite complete essential amino acids (Sinaga, MS 2016). In Table 1 you can see the values for the nutritional content of various types of mushrooms.

Table 1. Nutrient Content Value of Mushrooms Per 100 Grams

No	Types of Mushrooms	Carbohydrates (%)	Fat (%)	Protein (%)
1	Ear	73.6	0.8	7.7
2	Merang	64.5	0.9	16.0
3	Button	3.0	0.2	3.6
4	Shitakes	67.5	8.0	17.7
5	Oyster	57.6	2,2	30.4

Source: Department of Agriculture (1982) in Manullang (2008)

ANALYSIS OF THE PROFITABILITY OF MERANG MUSHROOM FARMING IN BAKTIYA BARAT DISTRICT, NORTH ACEH DISTRICT

Nisaul Husna, Jamilah, Muhammad Authar, Riani

From the data above, it can be seen that straw mushrooms have the highest protein nutritional content among other types of mushrooms. The nutritional content of straw mushrooms makes the demand for mushrooms quite high, so many people take part in this promising business opportunity. The public's desire for straw mushrooms has made mushroom entrepreneurs even more enthusiastic in continuing their mushroom farming business. Straw mushroom cultivation activities in Indonesia generally use palm oil casks which come from oil palm. Oil palm cobs are used as a growing medium for mushroom growth. Mushroom farming activities are usually carried out by farmers who are classified as small business farmers who only have a small area of land, limited capital and irregular production.

North Aceh Regency is one of the regencies in Aceh Province with an area of $\pm 3,296.86$ km². North Aceh Regency consists of several sub-districts that cultivate straw mushrooms, namely Tanah Luas District, Kuta Makmur District, Cot Girek District, Lhoksukon District and West Baktiya District. In West Baktiya District, the straw mushroom farming business is only managed by Mr. Tarmizi, which was started from 2015 until now. Straw mushroom farming is done by making a kumbung (a place for cultivating straw mushrooms). The labor used by straw mushroom entrepreneurs is labor involved in procuring raw materials, mixing raw materials, fermentation, pasteurization/steam, cooling, planting seeds, controlling pests and diseases, care/maintenance, harvesting and post-harvest handling as well as waste disposal. Therefore, every cost incurred by entrepreneurs as well as the production of straw mushrooms and the selling price of straw mushrooms will influence the level of revenue and profits that will be obtained by entrepreneurs.

THEORETICAL REVIEW

Profitability Concept

Profitability is the ability to measure the overall effectiveness of management which is shown in the size of the level of profit obtained from sales-related income (Fahmi, 2014). The better the profitability ratio value, the better the business's ability to generate profits. Profitability ratios are ratios that assess a company's ability to generate profits. The aim of the profitability ratio is to measure or calculate the profits generated, assess the development of profits over time, and measure the productivity of all company funds used, both own capital and borrowed capital.

Break Even Point (BEP) Concept

The break-even point or break event point (BEP) is a situation where a business does not experience losses and does not make a profit. In simpler terms, a business is said to break even if the amount of revenue obtained is equal to the amount of costs incurred. BEP is a way to find out the minimum sales volume so that a business does not experience losses but has not yet made a profit. The benefit of calculating the break-even point is to control ongoing operational activities, as a consideration in determining selling prices, as a basis for planning operational activities in an effort to obtain a certain profit as a consideration in making production or sales decisions (Mulyadi, 1999).

The concept of MOS (Marginal Of Safety) and MIR (Marginal Income Ratio)

The ability of a business to earn profits can be determined by calculating the marginal of safety (MOS) and marginal income ratio (MIR). Marginal of safety (MOS) is the ratio between sales levels at break-even conditions. MOS also indicates the level of decline in production or sales that can be tolerated. The MOS value is a guide for business management regarding the tolerance limit for decreasing production so that the company does not experience losses even though it has not yet made a profit. The greater the MOS value, the better the business. This is because the greater the business's safety limit for reducing its sales level (Munawir, 2004).

Farming Concept

Farming is an organization whose implementation is independent and is deliberately carried out by a person or group of people, social groups whether related to genealogy, politics or territory as the manager (Soekartawi, 1995). Farming is the process of organizing production factors, namely nature, labor, capital and management which are carried out by individuals or groups of people to produce output that can meet the needs of the family or other people in addition to the motive of seeking profit (Soharjo and Patong, 1973).



Production Cost Concept

Expenditure costs are the value of using production facilities and the values charged to the product concerned (Soekartawi et al, 1986). Costs are all expenses expressed in money or with the aim of obtaining or producing a product in one production period. Daniel and Suratiyah (2006) state that production costs are compensation received by the owners of production factors or costs incurred in the production process, whether in cash or not.

Income Concept

Income is the income obtained in a farming business which is the multiplication of the amount of output produced and the selling price. The selling price is the transaction price between farmers (producers) and buyers for each commodity based on one location. The units used are units commonly used by buyers/sellers in bulk, for example kg, quintals, belts and so on (Soekartawi, 2006).

Straw Mushroom

Suriawiria (2002) states that mushrooms are also called mushrooms, suung, mushrooms, or champignons. Fungi are a type of plant that generally has green leaves (chlorophyll), so it can fulfill its own carbohydrates through photosynthesis. However, mushrooms do not have chlorophyll, so their carbohydrate needs must be met from outside.

RESEARCH METHODS

Location, Object and Scope of Research

This research was conducted at Mr. Tarmizi's straw mushroom business in West Baktiya District, specifically in Gampong Matang Sijuek Barat. The location determination was carried out directly with the consideration that this business is the only straw mushroom farming business in West Baktiya District, North Aceh Regency. The object of research is Mr Tarmizi's straw mushroom farming business. The scope of this research only analyzes the level of profitability in Mr. Tarmizi's straw mushroom farming business in West Baktiya District, North Aceh Regency.

Data Types and Sources

The type of data used in this research is quantitative data. Quantitative data is data in the form of numbers. Meanwhile, the data sources used in this research are primary data and secondary data. Primary data is data collected and obtained directly in the field by conducting interviews with respondents, namely straw mushroom business owners in West Baktiya District, North Aceh Regency. Secondary data is data obtained from relevant literature such as books, research reports, official websites, journals and so on. Data sources were also obtained from related agencies such as the Central Statistics Agency, Agriculture Service, and BPP.

RESULTS AND DISCUSSION

Cost Analysis

1. Fixed Costs

Table 1. Use of Equipment in Merang Mushroom Farming

Description	Amount	Unit	Unit Price (Rp)	AmountCost (Rp)	Economic Age (Years)	Depreciation Value	
						Rp/yr	Rp/PP
Kumbung	6	Units	8,000,000	8,000,000	2	4,000,000	166,666.66
Water pump machine	1	Units	600,000	600,000	5	120,000	5,000
Soaking tub	1	Units	1,500,000	1,500,000	5	300,000	12,500
Pasteurization drum	2	Units	150,000	300,000	2	150,000	6,250
Tarp	2	Units	340,000	680,000	2	340,000	14,166.66
Bucket	5	Units	15,000	75,000	2	37,500	1,562.5

ANALYSIS OF THE PROFITABILITY OF MERANG MUSHROOM FARMING IN BAKTIYA BARAT DISTRICT, NORTH ACEH DISTRICT

Nisaul Husna, Jamilah, Muhammad Authar, Riani

Description	Amount	Unit	Unit Price (Rp)	AmountCost (Rp)	Economic Age (Years)	Depreciation Value	
						Rp/yr	Rp/PP
Sheet cutter knife	10	Units	6,000	60,000	2	30,000	1,250
Scales	1	Units	150,000	150,000	5	30,000	1,250
Hansprayer	1	Units	40,000	40,000	2	20,000	833.3
Broom stick	2	Units	8,000	16,000	1	16,000	666.65
Dipper	2	Units	5,000	10,000	1	10,000	416.65
Shovel	1	Units	70,000	70,000	4	17,500	729.17
Sepuyer	1	Units	75,000	75,000	2	37,500	1,562.5
Pushcart	1	Units	650,000	650,000	4	162,500	6,770.8
Basket	3	Units	25,000	75,000	2	37,500	1,562.5
Evaporation pipe	1	Stem	350,000	350,000	2	175,000	7,291.5
Water pump pipe	2	Stem	28,000	56,000	2	28,000	1,166.65
Ring Well	1	Units	1,000,000	1,000,000	10	100,000	4,166.66
Total cost of equipment				13,707,000		5,611,500	225,478.9

2. Variable Costs

Costs for Using Raw and Supporting Materials

Table 2. Use of Raw Materials Per Production Process in Merang Mushroom Farming

No	Raw material	Amount	Unit	Unit Price (Rp)	AmountCost (Rp)
1	Seedlings	45	Baglog	30,000	1,350,000
2	Palm oil costs	4	Cubic	100,000	400,000
3	Tarp	120	Meters	3,000	360,000
4	Alcohol	3	Bottle	10,000	30,000
5	Firewood	3	Cubic	100,000	300,000
6	Dolomite chalk	45	Kg	2,000	90,000
7	Sugar	12	Kg	13,000	156,000
8	Wheat polar	60	Kg	2,000	120,000
Total					2,806,000

Labor costs

Table 3. Labor Costs Per Production Process in Merang Mushroom Farming

No	Type of activity	Amount	Unit	Wages/Life (Rp)	Amount Wages (Rp)
1	Freight forwarding palm	3	Person	30,000	90,000
2	Pasteurization/Steam	2	Person	50,000	100,000
3	Watering	1	Person	30,000	30,000
4	Harvesting	4	Person	50,000	200,000
Total					420,000



Miscellaneous expense

Table 4. Other Costs in Merang Mushroom Farming

No	Description	Amount of Fee (Rp/pp)
1	Electricity cost	20,000
2	Transportation costs	100,000
Amount		120,000

3. Total Production Costs

Table 5. Total Production Costs in Merang Mushroom Farming

No	Type of Use	Cost (Rp)
A	Fixed Costs	
1	Equipment Depreciation Costs	225,478.9
B	Variable Costs	
1	Raw Material Costs	2,806,000.0
2	Labor costs	420,000.0
3	Miscellaneous expense	120,000.0
	Total Variable Costs	3,346,000.0
	Total cost	3,571,478.9

4. Production and Production Value

Table 6. Production and Production Value of Merang Mushrooms

No	Description	Unit	Amount
1	Production	kg	
	Kumbung 1		48
	Kumbung 2		50
	Kumbung 3		52
	Production mount		150
2	Selling price	Rp/kg	50,000
	Reception	Rp/pp	7,500,000

Net income

$$\begin{aligned} \text{Profit (\%)} &= \text{Total Revenue (TR)} - \text{Total Costs (TC)} \\ &= \text{Rp. 7,500,000} - \text{Rp. 3,571,478.9} \\ &= \text{Rp. 3,928,521.1} \end{aligned}$$

From the results above it can be seen that the profit obtained from ushatani straw mushrooms is IDR. 3,928,521.1

Profitability Analysis

Profitability is the ability of an industry or company to earn profits in relation to sales, own capital and total production assets (Sartono and Erniwati, 2015). Profitability analysis is an analysis that measures how much effort is made in obtaining profit or gain. If the profitability value is positive then the company is able to generate high profits or profits. Before calculating profitability, you can look at the break event point (BEP) level first.

$$\begin{aligned} \text{Revenue break-even point (Rp)} &= \frac{FC}{1 - \frac{VC}{TR}} \\ &= \frac{225.478,9}{1 - \frac{3.346.000}{7.500.000}} \\ &= \frac{225.478,9}{1 - 0,446} \\ &= \frac{225.478,9}{0,554} \\ &= \text{Rp 407,001.62} \end{aligned}$$

ANALYSIS OF THE PROFITABILITY OF MERANG MUSHROOM FARMING IN BAKTIYA BARAT DISTRICT, NORTH ACEH DISTRICT*Nisaul Husna, Jamilah, Muhammad Authar, Riani*

Based on the calculation above, it shows that the minimum income that must be obtained based on the break-even point is IDR. 407,001.6 /production process. As for the comparison between the results of the break-even point calculation and the actual conditions in the straw mushroom farming, the excess income of IDR 7,500,000 from sales over variable costs in the straw mushroom farming shows that the business is able to cover fixed costs and make a profit.

5. MOS (Marginal Of Safety) Calculation

The MOS calculation is as follows:

$$\begin{aligned} \text{MOS (\%)} &= \frac{TR - BEP (Rp)}{TR} \times 100\% \\ &= \frac{7.500.000 - 407.001,62}{7.500.000} \times 100\% \\ &= 0,945 \times 100\% \\ &= 94,5\% \end{aligned}$$

From the calculation above, it shows that the MOS value is 94.5%, which means that the level of production decline can be seen so that the business is in a state of no profit and no loss of 94.5% of the production volume. The MOS value shows the level of decline in sales or production that can be tolerated so that the business does not experience losses. The greater the MOS value, the better it will be because the greater the level of security for the company if there is a decrease in sales volume or production volume.

MIR (Marginal Income Ratio) Calculation

$$\begin{aligned} \text{MIR (\%)} &= \frac{TR - TVC}{TR} \times 100\% \\ &= \frac{7.500.000 - 3.346.000}{7.500.000} \times 100\% \\ &= 0,553 \times 100\% \\ &= 53,3\% \end{aligned}$$

Based on the calculation results above, it can be seen that the MIR value achieved by straw mushroom farming is 53.3%, which is available to cover fixed and variable costs. A decrease in MIR in a business is due to an increase in total variable costs. The MIR value shows the portion of sales proceeds available to cover fixed costs. This can mean that straw mushroom farming has a great ability to cover fixed costs and make a profit in straw mushroom farming.

Profitability Calculation

$$\begin{aligned} \pi &= \text{MOS} \times \text{MIR} \times 100\% \\ &= 94,5\% \times 53,3\% \times 100\% \\ &= 50\% \end{aligned}$$

From the profitability calculation above, it shows that the straw mushroom farming has the ability and obtains a profit or profitability of 50%. This shows that straw mushroom farming earns large profits from the production activities undertaken.

CONCLUSION

Based on the results of research and profitability data analysis that has been carried out on Mr. Tarmizi's straw mushroom farming business in West Baktiya District, North Aceh Regency, it can be concluded, among others:

1. The total costs incurred in straw mushroom farming for one production process are IDR. 3,571,478.9 with fixed costs of Rp. 225,478.9 and variable costs of Rp. 3,346,000. With income earned of Rp. 7,500,000, resulting in a profit of Rp. 3,928,521.1.
2. Straw mushroom farming is a farming business that operates in the agricultural sector which is capable of earning a profit of 50%.



SUGGESTION

It is recommended that the North Aceh Regency Government allocate a larger budget in order to support the inspectorate's tasks related to realizing budget management within the North Aceh Regency Government.

REFERENCES

- Andoko A, Parjimoha H. 2007. *Budidaya Jamur*. Jakarta : Agromedia.
- Alex, M.S. 2011. *Meraih Sukses dengan Budidaya Jamur Tiram, Jamur Merang dan Jamur Kuping*. Yogyakarta: Pustaka Baru Press.
- Daniel, M. 2001. *Pengantar Ekonomi Pertanian*. Jakarta: Bumi Aksara. Daniel, M. 2002. *Pengantar Ekonomi Pertanian*. Jakarta: Bumi Aksara.
- Direktorat Jendral Hortikultura (2006), *Manajemen Pemasaran Modern*, Liberty, Yogyakarta.
- Fariyanti, A. 2015. *Analisis Profitabilitas Usahatani Bawang Merah Berdasarkan Musim Di Tiga Kabupaten Sentra Produksi Di Indonesia*. Skripsi. Bogor. IPB Repository.
- Fahmi, I. 2014. *Manajemen Keuangan Dan Pasar Modal*. Jakarta: Mitra Wacana Media.
- Fermansyah. 2012. *Analisis Biaya Produksi Dan Pendapatan Usaha Jamur Tiram Putih (Pleuratus astreatus sp) (Studi Kasus Pada Petani Jamur Tiram Putih Di Kelurahan Lempake Kecamatan Samarinda Utara)*. Skripsi. Samarinda: Universitas Mulawarman.
- Kasmir. 2015. *Analisis Laporan Keuangan*. Jakarta: PT. Raja Grafindo Persada. Kloter Philip, (2002), *Manajemen, Pemasaran di Indonesia: Analisis, Perencanaan*.
- Laila, R. 2017. *Analisis Komparasi Produktivitas Padi Sawah Melalui Kebijakan Optimalisasi Dengan Non Kebijakan Optimalisasi Jaringan Irigasi Tersier (Jit)*. *Jurnal Agribisnis*.
- Mankiw, N.G. 2006. *Makro Ekonomi Edisi Keenam*. Jakarta: Erlangga. Mulyadi. 1999. *Akutansi Biaya*. Yogyakarta: Aditiya Media.
- Munawir. 2004. *Analisis Laporan Keuangan*. Yogyakarta. Liberty.
- Nirmala, A., Moeljadi, M., dan Andarwati, A. 2006. *Pengaruh Ukuran Perusahaan, Profitabilitas, Pertumbuhan Penjualan dan Kepemilikan Manajerial Terhadap Struktur Modal dan Nilai Perusahaan Manufaktur di Indonesia*. *Jurnal Aplikasi Manajemen*, 14 (3). Malang: Universitas Brawijaya.
- Nurmala. 2012. *Pengantar Ilmu Pertanian*. Yogyakarta: Graha Ilmu.
- Rahim, A., dan Hastuti, D.R.D. 2007. *Ekonomika Pertanian (Pengantar, Teori, dan Kasus)*. Depok: Penebar Swadaya.
- Rahmawati, R.2012. *Pengaruh Pemberian Konsorsium Mikroba Biofertilizer Terhadap Pertumbuhan Dan Produksi Jamur Tiram Putih (PleorotusOstrea tus)*. Surabaya :Badan Penerbit Universitas Airlangga.
- Sinaga, M. Suradji. 2000. *Jamur Merang dan Budi Dayanya*.PT Penebar Swadaya. Jakarta.
- Saputra, Wanda. 2016. *Budidaya Jamur Merang*. Jakarta: PT Agromedia Pustaka. Sinaga, M. Suradji. 2000. *Jamur Merang dan Budi Dayanya*. PT Penebar Swadaya. Jakarta.
- Setyowati. 2004. *Analisis Pemasaran Jambu Mete di Kabupaten Wonogiri*. Jurusan Agrobisnis Fakultas Pertanian UNS. *Jurnal Sepa*, 1 (1), 40-50.
- Soeharjo, A dan Patong, D. 1973. *Sendi-sendi Pokok Usahatani*. Departemen Ilmu Sosial Ekonomi Pertanian. Fakultas Pertanian. Institut Pertanian Bogor. Bogor.
- Soeharno dan Starso, Y. 2009, *Marketing in Practice*. Yogyakarta: Graha Ilmu. Tasma, A. 2016. *Ekonomi Manajerial Dengan Pendekatan Matematis*, Jakarta: Rajawali Press.
- Soekartawi. 1995. *Analisis Usahatani*. Jakarta: UI-Press.
- Soekartawi. 2003. *Dasar Penyusunan Evaluasi Proyek*. Jakarta: Pustaka Sinar Harapan.
- Soekartawi. 2006. *Agribisnis Teori dan Aplikasi*. Jakarta: Rajawali Press. Soekartawi. Soeharjo, A. Dillon, J.L, Hardaker, J.B. 1986. *Ilmu Usahatani Dan Penelitian Untuk Pengembangan Petani Kecil*. Jakarta: UI Press.
- Soekartawi. 2006. *Analisis Usahatani*. Jakarta: Penebar Swadaya.
- Sujarweni, V.W. 2017. *Analisis Laporan Keuangan*. Yogyakarta: Pustaka Baru Press.
- Suratiah, K. 2006. *Ilmu Usahatani*. Jakarta: Penebar Swadaya.
- Sukirno, S. 1997. *Pengantar Mikro Ekonomi. Edisi 2*. Jakarta. Raja Grafindo
- Suratiah, K. 2015. *Ilmu Usahatani*. Jakarta: Penebar Swadaya.
- Sujarweni, V. W. 2017. *Analisis Laporan Keuangan*. Yogyakarta: Pusataka Baru Press.

**ANALYSIS OF THE PROFITABILITY OF MERANG MUSHROOM FARMING IN BAKTIYA BARAT DISTRICT,
NORTH ACEH DISTRICT**

Nisaul Husna, Jamilah, Muhammad Authar, Riani

Suriawiria. 2001. *Budidaya Jamur Shitake*. Jakarta: Penebar Swadaya. Suriawiria. 2002. *Budidaya Jamur Tiram*. Yogyakarta: Kanisius.

Suriawiria 2004. *Sukses Beragrobisnis jamur kayu shitake- Kuping- Tiram*. Jakarta: Penebar Swadaya.

Sudiyono, 2002. *Pemasaran Pertanian*. Universitas Muhammadiyah Malang. Kota Malang.

Tasma, A. 2016. *Ekonomi Manajerial Dengan Pendekatan Matematis*, Jakarta: Rajawali Press.